

REMARKS/ARGUMENTS

In view of the following remarks, reexamination and reconsideration of this application, withdrawal of the rejections, and formal notification of the allowability of all claims as presented are earnestly solicited. As detailed in the Office Action mailed August 17, 2006, Claims 11-20 are pending, wherein Claims 11-20 have been rejected. In response to the Office Action, Claims 11-13 and 16-20 have been amended to further clarify the subject matter being claimed. The amendments to Claims 11-13 and 16-20 find support throughout the Specification and the Figures, and no new matter has been added. It is believed that the claims now define patentable subject matter over the prior art cited in the Office Action and notice to such effect is requested at the Examiner's earliest convenience.

Claim Rejections – 35 U.S.C. §102

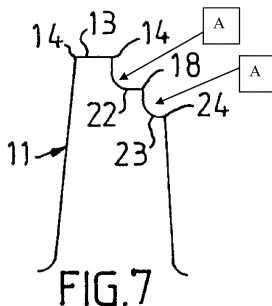
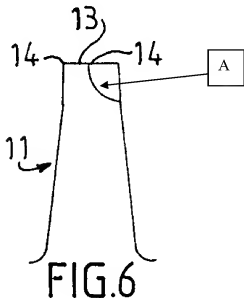
Claim 11 was rejected in the Office Action as being anticipated by International Patent Publication No. WO 00/56459 to Virving. In response, Claim 11 has been amended, as well as Claims 12, 13, and 16-20 which depend therefrom, to further clarify the subject matter being claimed.

More particularly, Claim 11, as amended, recites a refining surface of a refiner, wherein the refiner includes two opposed refining surfaces coaxially-disposed along an axis, with at least one of the refining surfaces being configured to rotate about the axis in a rotation direction, further wherein the refining surfaces are configured to receive a lignocellulose material therebetween for defibering thereof. Such a refining surface comprises a plurality of radially-extending bars defining grooves between adjacent bars, with each bar having a radially-extending length and an angularly-extending width. **At least one of the bars includes a non-concave bevel extending from a leading edge of the bar,** wherein the leading edge is defined with respect to the interaction of the bevel with the opposed refining surface. **The non-concave bevel extends across the bar for less than the entire width thereof. The remainder of the width of the bar is substantially parallel to the refining surface.** The leading edge of the **non-concave** bevel is further configured such that, as an opposed bar of the opposed refining surface approaches axial coincidence with the **non-concave** bevel, an increasing force is generated

substantially perpendicularly to the refining surface and axially outward with respect to the opposed refining surfaces.

As disclosed in the Specification, for example, paragraphs [0014] and [0024], the bevel about the leading edge of the bar helps to create a force between the refining surfaces that urges the refining surfaces apart. Because of the axially outward force, the refining surfaces will not contact each other, and thus will reduce the wear experienced by the refining surfaces during the defibering process. Further, the Figures, for example, Figures 5, 6a-6c, 7a-7c, and 8a-8c, illustrate embodiments of the present invention whereby the bevels are not concave. Claim 11 has thus been amended to recite a non-concave bevel extending from a leading edge of the bar and across the bar for less than the entire width thereof, wherein the remainder of the width of the bar is substantially parallel to the refining surface. Since such amendments find support within the Specification and the Figures, no new matter has been added.

In contrast, FIGS. 2-5 of the Virving '459 reference, including FIG. 3 as cited in the Office Action, show axial views of various embodiments of a bar of a refining segment (FIG. 1) for a refiner, with the axial views showing the bar extending in the radial direction of the refining segment. FIGS. 6 and 7 of the Virving '459 reference further illustrate cross-sectional views of the bars shown in FIGS. 2-5. That is, each of the bars 11 of the refining element 10 have upper surfaces 13 and edges 14, wherein FIGS. 2-5 indicate that plan views (i.e., looking at the top surfaces 13 of the respective bars 11) of the bars 11 are provided. Each of FIGS. 2-5 is disclosed by the Virving '459 reference as defining steps 17, 20, 21, 22, 23 extending along the respective bar 11 in the radial direction. The steps 17, 20, 21, 22, 23 are configured to be concave in cross-section, shown as element "A" in FIGS. 6 and 7 below.



With respect to the term “bevel,” the Office Action asserts that the term must be read as broadly as possible and, as such does not exclude the concave steps 17, 20, 22, 23 of the Virving ‘459 reference. Moreover, the Office Action asserts that any deviation from the horizontal top surface (i.e., element 13 above) or any deviation from a vertical plane perpendicular to the horizontal top surface 13 would constitute a “bevel” as the term is used. In this regard, the Applicants submit that Claim 11, as amended, now particularly recites a non-concave bevel extending from a leading edge of the bar and across the bar for less than the entire width thereof, wherein the remainder of the width of the bar is substantially parallel to the refining surface. Claim 11, as amended, thus excludes the concave steps disclosed by the Virving ‘459 reference.

As stated by MPEP §2131, “to anticipate a claim, the reference must teach every element of the claim.” That is, “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

In this regard, the Virving '459 reference **does not** teach or suggest a refining surface comprising a plurality of radially-extending bars defining grooves between adjacent bars, wherein **at least one of the bars includes a non-concave bevel extending from a leading edge of the bar, and across the bar for less than the entire width thereof, with the remainder of the width of the bar being substantially parallel to the refining surface,** and further wherein the leading edge of the **non-concave** bevel is configured such that, as an opposed bar of the opposed refining surface approaches axial coincidence with the **non-concave** bevel, an increasing force is generated substantially perpendicularly to the refining surface and axially outward with respect to the opposed refining surfaces, as now particularly claimed in amended Claim 11.

Thus, in light of this distinction between the Virving '459 reference, and Claim 11 now pending, the Applicants submit that amended Claim 11 is **not anticipated** by, and is therefore **patentable over,** the Virving '459 reference. Accordingly, the Applicants respectfully request withdrawal of these rejections.

Claim Rejections – 35 U.S.C. §103

Claims 12-20 were also rejected in the Office Action as being obvious over the Virving '459 reference. As previously discussed, Claim 11, upon which Claims 12-20 depend, is **not anticipated** by the Virving '459 reference. As such, the Applicants submit that Claims 12-20, which depend either directly or indirectly from Claim 11, are patentable over the Virving '459 reference cited in the Office Action. As such, the Applicants respectfully request withdrawal of these rejections.

Conclusion

In summary, the Virving '459 reference **does not** teach or suggest the embodiments of the present invention, as now claimed in Claim 11. Accordingly, in view of these differences between the Applicants' invention and the Virving '459 reference, it is submitted that the present invention, as defined by the pending claims, is patentable over the prior art cited in the Office Action. As such, Claims 11-20 are believed to be in condition for immediate allowance.

Appl. No.: 10/519,635
Amdt. dated 10/25/2006
Reply to Office action of August 17, 2006

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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